

ASSESSMENT TOOL 1:

Assessing Your Level of Interoperability

The purpose of this tool is to help you develop a basic snapshot of interoperability, to begin identifying necessary partners, and to facilitate working with those partners. This tool can best be used by a team that includes appointed and elected officials and public safety leaders from several jurisdictions, regions, or States.

Begin by asking the following questions: What types of emergencies typically occur in your jurisdiction, region, or State and which public safety agencies would respond in each of them? Some incidents like traffic accidents occur daily. How about major crimes like bank robberies or large-scale fires or disasters like hurricanes? Which agencies or personnel need to talk to one another every day? What personnel should be in communication in the first 8 hours of an emergency? What personnel will need to be added to that initial group if the emergency continues for longer than 8 hours?

To assess the level of communications interoperability within your community, region, or State, emergencies have been grouped into three categories—frequently occurring emergencies, major crimes or emergencies, or large-scale disasters or incidents

Frequently Occurring Emergencies

Some types of emergencies occur on a frequent basis. These include major traffic accidents, violent crimes, hostage situations, drownings, industrial accidents, and similar incidents. Think about what types of incidents occur frequently in your jurisdiction, region, or State.

Incidents that frequently occur:

1. _____
2. _____
3. _____
4. _____
5. _____

Agencies that typically respond to these incidents:

Law Enforcement Agencies (Police, Sheriff, FBI, State Patrol, Agencies from other jurisdictions, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Emergency Service Agencies (Fire, Emergency Medical Services, Hazmat, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Put a checkmark next to each of the agencies that can directly and seamlessly communicate via radio on a real-time basis with each of the other agencies identified.

Major Crimes or Incidents

Major crimes or incidents include such events like bank robberies, child kidnappings, large-scale fires, chemical leaks, large-scale industrial accidents, train derailments, and similar incidents. Think about what types of major crimes or incidents have occurred or could occur.

Major crimes or incidents that have occurred or could occur:

1. _____
2. _____
3. _____
4. _____
5. _____

Agencies that have or would likely respond to these incidents:

Law Enforcement Agencies (Police, Sheriff, FBI, State Patrol or Police, Agencies from other jurisdictions, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Emergency Service Agencies (Fire, Emergency Medical Services, Hazmat, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Put a check mark next to each of the agencies that can directly and seamlessly communicate via radio on a real-time basis with each of the other agencies identified.

Large-Scale Disasters or Incidents

Large-scale disasters and incidents include events like hurricanes, tornadoes, earthquakes, airplane crashes, school shootings, terrorist attacks, and similar incidents. Think about what types of incidents have or could occur.

Large-scale disasters or incidents that have or could occur:

1. _____
2. _____
3. _____
4. _____
5. _____

Agencies that would likely respond to these incidents:

Law Enforcement Agencies (Police, Sheriff, FBI, State Patrol or Police, Agencies from other jurisdictions, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Emergency Service Agencies (Fire, Emergency Medical Services, Emergency Management Agencies, Hazmat, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.)

1. _____ ☐
2. _____ ☐
3. _____ ☐
4. _____ ☐
5. _____ ☐

Put a check mark next to each of the agencies that can directly and seamlessly communicate via radio on a real-time basis with each of the other agencies identified.

	<u>Your Answer</u>	<u>Example</u>
1. Total number of agencies listed for all three types of incidents.	_____	50
2. Total number of boxes next to agencies checked	_____	10
3. Divide Line 2 by Line 1 for percentage agencies interoperable	_____	20%

While it would be ideal to attain 100 percent interoperability, each agency must make an independent assessment of how the percentage of agencies with which it achieves interoperability affects that agency's ability to perform its duties.

ASSESSMENT TOOL 2:

Assessing Radio Communications Capability

Radio communication systems are expensive and before a decision is made to either update or purchase a system, there must be an assessment of the current communication system and future needs. The following is a guide that builds on Assessment Tool 1 and is designed primarily for use by public safety officials who need to assess the status of the agency's or jurisdiction's system. Public officials, at all levels, can benefit from the information that this tool elicits and are encouraged to work with their public safety officials completing this assessment. This tool is not intended to answer all questions or concerns, but rather, it provides a baseline upon which planning discussions can begin. Officials using this assessment are encouraged to modify it, based on their agency's or jurisdiction's needs.

Please note that where the term "agency" appears, it is also intended to mean jurisdiction, region, or State, depending upon the user.

Section 1. Descriptive Information

1. Which of the following best describes the typography/terrain in which your agency operates? (check all that apply)

- ☐ Coastal or intracoastal waterway
- ☐ Relatively flat
- ☐ Rolling hills
- ☐ Mountainous
- ☐ Heavily forested

2. Does your jurisdiction or a portion of your jurisdiction include many high-rise buildings?

- ☐ Yes ☐ No

Section 2. Operations Information

1. Does your agency have at least one radio channel solely designated for communicating with other agencies?

☐ Yes ☐ No (if, "no," why not?) _____

If, "yes," how many channels does your agency have? _____

2. Which of the following best describes your agency's arrangement for dispatching calls?

- ☐ Agency/department does not own its own dispatch operations
- ☐ Dispatch is part of a combined dispatch center (e.g., Law Enforcement, Fire, EMS)
- ☐ Dispatch is a contracted service
- ☐ Dispatch is controlled by a commercial operator
- ☐ Other (specify) _____

3. What is the primary radio language used by your agency when communicating with other agencies or organizations?

- ☐ "Plain" English
- ☐ Code
- ☐ Other (specify) _____

4. To what extent does the use of different radio languages hinder effective communication between your agency and other agencies?
(where 1 = "not a problem" to 5 = "major problem")

1 2 3 4 5

5. Which radio frequencies does your agency use to communicate with other public safety and/or public service organization?
(check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Does not apply | <input type="checkbox"/> Lowband VHF (25-50 MHz) |
| <input type="checkbox"/> Highband VHF (150-174 MHz) | <input type="checkbox"/> Federal band UHF (406-420 MHz) |
| <input type="checkbox"/> Lowband UHF (450-470 MHz) | <input type="checkbox"/> Lowband UHF TV Sharing (470-512 MHz) |
| <input type="checkbox"/> 800 MHz (806-869 MHz) | <input type="checkbox"/> Other _____ |

6. How often does your agency have radio communication with the following levels of public safety and/or public service agencies or organizations? (For definitions of public safety and public service, see page 12.)

PUBLIC SAFETY

	<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Yearly</u>	<u>Never</u>
Federal level					
State level					
Local level					

PUBLIC SERVICE

	<u>Daily</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Yearly</u>	<u>Never</u>
Federal level					
State level					
Local level					

7. Identify the TYPES of interoperability (essential communication links within or between public safety and public service communication systems from two or more different agencies to interact with another and to exchange information according to a prescribed method to achieve predictable results) your agency has experienced during the 12 months.

PUBLIC SAFETY

	<u>Frequently Occurring Emergencies</u>	<u>Major Crime Emergencies</u>	<u>Large-Scale Disasters</u>
Federal level			
State level			
Local level			

PUBLIC SERVICE

	Frequently Occurring Emergencies	Major Crime Emergencies	Large-Scale Disasters
Federal level			
State level			
Local level			

8. Does your agency have intergovernmental agreements with neighboring jurisdictions for mutually defined calls for service or disasters (e.g., mutual aid agreements)?

Calls for Service ☐ Yes ☐ No

Disasters ☐ Yes ☐ No

9. To what extent has your agency's need for interoperability with other public safety and public safety organizations changed over the past 5 years? (where 1 = decreased, 3 = no change, and 5 = increased a great deal)

1 2 3 4 5

10. Rate your agency's ABILITY to establish a radio communication link with each of the following levels of public safety and/or public service agencies/organizations. (where 1 = poor to 5 = excellent)

PUBLIC SAFETY	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Federal level					
State level					
Local level					

PUBLIC SERVICE	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Federal level					
State level					
Local level					

11. Estimate the total number of public safety and/or public service agencies/organizations at each level with which your agency requires radio communication.

Number of Agencies: (Public Safety)

Federal Level _____

State Level _____

Local Level _____

Number of Agencies: (Public Service)

Federal Level _____

State Level _____

Local Level _____

12. Rate the ABILITY of your agency's wireless communication system to effectively handle the following categories of incidents. (where 1 = poor to 5 = excellent) (For definition of categories, refer to Tool #1)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Frequently occurring emergencies					
Major crimes and emergencies					
Large-scale disasters or incidents					

13. Rate your agency's OVERALL ABILITY to handle interoperability (where multiple agencies or jurisdictions must communicate or share information or data during a common incident) situations 5 years ago, today, and estimate its ability 5 years into the future. (where 1 = poor to 5 = excellent)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
5 years ago					
Today					
5 years from now					

14. Based on your agency's experience, indicate the severity of each of the following obstacles to interoperability. (where 1 = not a problem to 5 = major problem)

<u>Obstacle</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Different bands					
Human and institutional limitations					
Different communication modes (analog vs. digital)					
Different communication modes (conventional vs. trunked)					
Limitations of commercial services					
Limitations in funding					
Different coverage areas					
Political/turf issues					

15. To what extent has the availability channels (821-869 MHz) alleviated communications interoperability problems in your jurisdiction or State? (where 1 = not at all to 5 = extremely)

1 2 3 4 5

Section III. Information and Training

1. How important is each source of information to your agency when planning for the purchase of wireless communications technologies? (where 1 = not important to 5 = extremely important)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Equipment manufacturers					
Professional journals/ magazines					
Professional/trade conferences					
Independent consultants					
Other government agencies					
Local college or university					
Internal knowledge					
Other					

2. Does your agency participate in joint training exercises with other agencies or organizations that involve the actual use of wireless communications equipment?

☐ Yes ☐ No (skip to question #5)

3. Regarding question #2, indicate the levels of other agencies/organizations that participate in the joint training exercises. Include both government and non-government agencies.

☐ Federal Level ☐ State Level ☐ Local Level

4. In what year did your agency most recently participate in joint training exercises that involved the actual use of wireless communication equipment? _____

5. How well do you believe your agency's training has prepared your personnel to handle communication interoperability situations?
(where 1 = poor to 5 = excellent)

1 2 3 4 5

6. How familiar is your agency with the following? (where 1= no knowledge to 5 = very knowledgeable)

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Project 25 Standards					
FCC Refarming efforts					
FCC Frequency Application Process					
NPSPAC Regional Planning Process					
FCC Internet Sites					
TIA/EIA- 102 Specifications					
FCC Spectrum (Allocation 846-06 MHz)					

Section IV. Communications Systems

1. Indicate the types of communication equipment used by your agency. (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Handheld land portable radio | <input type="checkbox"/> Vehicle-mounted mobile radio |
| <input type="checkbox"/> Pager | <input type="checkbox"/> Citizens band radio |
| <input type="checkbox"/> Amateur radio | <input type="checkbox"/> Cellular phone/voice |
| <input type="checkbox"/> Telephone line (landline) | <input type="checkbox"/> Mobile data terminal (Dumb-terminal) |
| <input type="checkbox"/> Fax line | <input type="checkbox"/> Helicopter radio |
| <input type="checkbox"/> Cellular fax | |
| <input type="checkbox"/> Mobile laptop computer | |
| <input type="checkbox"/> Personal Digital Assistants | |
| <input type="checkbox"/> Fixed wing aircraft radio | |
| <input type="checkbox"/> Other | |

2. Does your agency SHARE the infrastructure for its land mobile radio base system with other organizations?

- ☐ Yes ☐ No (go to question #4)

3. How involved is your agency in the decisionmaking process related to the operation of your land mobile radio system? (where 1 = not at all to 5 = extensively)

1 2 3 4 5

4. Which of the following best describes your agency's communications arrangements?

- ☐ Independently owned and operated communications center used exclusively by our department
- ☐ Part of a communications center that serves several public safety and/or public service organizations in our jurisdiction
- ☐ Part of a multi-agency, multijurisdictional shared communications center
- ☐ Other

5. Does your agency own or lease its PRIMARY land mobile radio system?

- ☐ Own ☐ Lease ☐ Does not apply

6. How many of the following are in your land mobile radio system?

_____ Base Stations

_____ Repeaters

_____ Control Stations

7. Approximately how old is your CURRENT land mobile radio system?

_____ Year(s) Old

8. Does your agency use BOTH analog and digital radio systems?

Analog ☐ Yes ☐ No

Digital ☐ Yes ☐ No

9. Which best describes your PRIMARY land mobile radio system?

☐ Conventional ☐ Trunked

10. Identify the radio frequencies your agency CURRENTLY uses for VOICE-ONLY communication by indicating the current NUMBER of channels in each band.

Currently Uses

Current # of VOICE-ONLY Channels

Lowband VHF (25-50 MHz)

HighbandVHF (150-174 MHz)

UHF (406-512 MHz)

800 MHz (806-869 MHz)

Other

11. Identify the radio frequencies your agency CURRENTLY uses for DATA-ONLY communication by indicating the current NUMBER of channels in each band.

Currently Uses

Current # of DATA-ONLY Channels

Lowband VHF (25-50 MHz)

HighbandVHF (150-174 MHz)

UHF (406-512 MHz)

800 MHz (806-869 MHz)

Other

12. Identify the radio frequencies your agency CURRENTLY uses for ALTERNATE VOICE & DATA by indicating the current NUMBER of channels in each band.

Currently Uses

Current # of ALTERNATE
VOICE & DATA Channels

Lowband VHF (25-50 MHz)	_____
HighbandVHF (150-174 MHz)	_____
UHF (406-512 MHz)	_____
800 MHz (806-869 MHz)	_____
Other	_____

13. Does your agency have the ability to patch across channels?

☐ Yes ☐ No (skip to question #18)

14. How many simultaneous cross patches can be set up?

15. Rate the effectiveness of cross patches as a tool for achieving interoperability (where 1 = not effective to 5 = extremely effective)

1 2 3 4 5

16. Is a dispatcher REQUIRED to set up and break down the patch?

☐ Yes ☐ No

17. How serious are the following problems regarding your land-mobile radio system? (where 1 = not a problem to 5 = major problem)

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Not enough channels				
Not enough talk groups, if trunked				
Dead spots				
Fading				
Frequency interference				
Static				
Battery problems				
Not enough equipment				
Outdated equipment				
Equipment size/weight				
Different types of equipment				
Operational difficulty				

18. If you indicated "not enough channels" in question #17 as a problem, estimate the number of ADDITIONAL channels your agency needs for each of the following:

Additional VOICE-ONLY channels _____

Additional DATA-ONLY channels _____

Additional ALTERNATE VOICE & DATA channels _____

19. To what extent does topography/terrain hinder the effectiveness of your land mobile radio base system? (where 1 = no problem to 5 = major problem)

1 2 3 4 5

20. To what extent does the presence of high-rise buildings hinder the effectiveness of your land mobile radio base system? (where 1 = no problem to 5 = major problem)

1 2 3 4 5

21. Who handles your agency's RADIO SPECTRUM LICENSING issues?

- ☐ My agency
- ☐ A regional group
- ☐ The county
- ☐ The State
- ☐ Other _____
- ☐ Don't know

22. Does your agency PAY outsiders for radio spectrum frequency coordination services?

- ☐ Yes ☐ No

23. How many times does your agency interact with a radio spectrum frequency coordinator in a typical year? _____ times a year

24. Indicate ALL services your agency USES and PLANS TO USE within the next 5 years.

	<u>Currently Use</u>	<u>Plan to Use</u>
Cellular Digital Packet Data (CDPD)	___	___
Personal Communications Systems (PCS)	___	___
Specialized Mobile Radio (SMR)	___	___
Mobile Satellite System	___	___
Global Positioning System (GPS)	___	___
Paging	___	___
Cellular Switched Data	___	___
Cellular/Voice	___	___
Local Multi-Point Distribution Service	___	___
LMDS)/Multi-Point Multi-Channel		
Distribution Services (MMDS)		

25. Does your agency use a paging system for emergency "alerting" of personnel?

- ☐ Yes ☐ No (skip to question #32)

26. Which of the following best describes your agency's paging system?

- ☐ Tone and/or voice
- ☐ Alpha-numeric digital
- ☐ Both
- ☐ Other _____

27. Rate your agency's satisfaction with the performance of the paging system. (where 1 = not at all satisfied to 5 = extremely satisfied)

1 2 3 4 5

28. Does your agency use the Internet for official business?

- ☐ Yes
- ☐ No

29. Does your agency have essential information that needs to be accessed in real-time by mobile users?

- ☐ Yes
- ☐ No

30. Does your agency have plans to replace or substantially upgrade its land mobile radio system within the next 10 years?

- ☐ Yes
- ☐ No

If "yes," describe the purposes for which it is used.

31. What is your agency's preference for its NEXT land mobile radio system?

- ☐ Analog
- ☐ Digital
- ☐ Don't know

32. Does your agency plan to use BOTH analog and digital radio systems?

- ☐ Yes
- ☐ No
- ☐ Don't know

33. What is your agency's preference for its NEXT land mobile radio system?

- ☐ Conventional (not trunked)
- ☐ Trunked
- ☐ Don't know

34. To what extent is funding a concern for your agency in upgrading its land mobile radio system? (where 1 = not a problem to 5 = major problem)

1 2 3 4 5

35. What does your agency use to fund its current land mobile radio system? Check all that apply.

- ☐ State funding (if local government) _____ Percent of total
- ☐ Federal funding _____ Percent of total
- ☐ General fund budget appropriations _____ Percent of total
- ☐ Capital improvement budget _____ Percent of total
- ☐ Bond financing _____ Percent of total
- ☐ Special fees or taxes (please specify) _____ Percent of total
- ☐ Other _____ Percent of total
- ☐ Don't know

36. How does your agency plan to fund its next land mobile radio system?

- ☐ State funding _____ Percent of total
- ☐ Federal funding _____ Percent of total
- ☐ General fund budget appropriations _____ Percent of total
- ☐ Capital improvement budget _____ Percent of total
- ☐ Bond financing _____ Percent of total
- ☐ Special Fees or taxes (please specify) _____ Percent of total
- _____
- ☐ Other _____ Percent of total
- ☐ Don't know

37. What is the total number of mobile data terminals and/or laptop computers your agency CURRENTLY uses?

_____ Mobile Data Terminals (Dumb Terminals)
_____ Mobile laptop computers

38. Regarding mobile data terminals and mobile laptop computers, identify the types of WIRELESS DATA communication (not voice) your agency currently USES and PLANS TO USE within the next 2 years?

	<u>Currently Use</u>		<u>Plan to Use</u>	
Free Text	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Database Information	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

38. (continued) Regarding mobile data terminals and mobile laptop computers, identify the types of WIRELESS DATA communication (not voice) your agency currently USES and PLANS TO USE within the next 2 years?

Still Images (e.g.
photos or maps)

☐ Yes ☐ No ☐ Yes ☐ No

E-mail

☐ Yes ☐ No ☐ Yes ☐ No

Report Writing

☐ Yes ☐ No ☐ Yes ☐ No

39. How important will interoperability ISSUES be to your agency when it purchases its next land mobile radio system? (where 1 = not important to 5 = extremely important)

1 2 3 4 5

40. Has the lack of wireless communications interoperability ever hampered your agency's ability to respond to a call?

☐ Yes ☐ No

The following questions provide the opportunity for a narrative description of interoperability issues and problems that affect your agency or jurisdiction.

1. What are the wireless communications interoperability issues for your agency? How have you solved them?

2. Does the lack of wireless radio interoperability affect your department's ability to interact with other agencies in surrounding jurisdictions? Have adjustments been made?

Once these questions have been answered and additional information gathered, the planning process can begin on a more firm foundation. As a strategic plan for radio communications is being developed, refer back to the report section entitled "What Communications System Resources Do You Have?" and follow the steps provided.

This tool was modified from the following sources:

"State and Local Law Enforcement Wireless Communications and Interoperability: A Quantitative Analysis," National Institute of Justice, Taylor, Epper, & Tolman, NCJ 168961, January 1998.

"Fire and EMS Communications Interoperability," PSWN Program Information Brief, Department of Justice and Department of the Treasury, Washington, D.C. April 1999.

ASSESSMENT TOOL 3:

Assessing Your Current Commitment of Resources

Gathering information on how much your community, region, or State is currently spending on public safety radio communications is a first step in determining how much it will cost to develop interoperability in your area. Individual costs will depend on the state of communications in your community, region, or State, and the long-term communications plan. Committed resource information is usually researched and analyzed by the public communications professionals.

Once you identify what your city, county, or State is spending, you can meet with neighboring city, county, or State public safety communication officials to discuss partnering opportunities and to share information.

1. Describe the customers and users of the public safety communication process. Customers will typically include the subset of the public served by the communications program, while users will include department or division staff involved in the program and city, county, or State, or other organizations requiring information from the program.
2. What similar communication systems exist at this time? Describe any overlaps of functionality and capability.
3. List communication system alternatives (other than the proposed project) that exist to address this public safety need.
4. What service alternatives exist in lieu of the proposed project?
5. Can this project be incorporated into a multiple use system? What city, county, State, or Federal services would most benefit by being incorporated in the same application/system?
6. Describe any efforts undertaken to review and revise existing public safety communications processes prior to undertaking this project.